

WHAT IS CLAIMED IS:

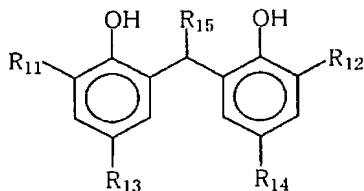
1. A photothermographic material comprising a substrate, and a photosensitive silver halide, a non-photosensitive organic silver salt, reducing agents for thermal development and a binder which are provided on the substrate, wherein:

the reducing agents for thermal development include a reducing agent which does not form a dye during thermal development and a reducing agent which forms a dye during thermal development; and

the reducing agent which forms a dye has higher activity than that of the reducing agent which does not form a dye.

2. A photothermographic material according to claim 1, wherein the reducing agent which does not form a dye is a compound represented by the general formula (R1), and the reducing agent which forms a dye is a compound represented by the following general formula (R2):

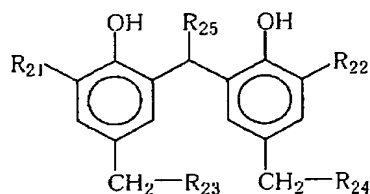
General formula (R1)



wherein R₁₁ and R₁₂ each independently represent a

secondary or tertiary alkyl group; R_{13} and R_{14} each independently represent an alkyl group having a 2 or more carbon atoms; and R_{15} represents an alkyl group:

General formula (R2)



wherein R_{21} and R_{22} each independently represent a secondary or tertiary alkyl group; R_{23} and R_{24} each independently represent a hydrogen atom, a hydroxyl group, an alkoxy group, an aryloxy group, an acyloxy group, an amino group or a heterocyclic group; and R_{25} represents a hydrogen atom or an alkyl group.

3. A photothermographic material according to claim 1, wherein the reducing agent represented by general formula (R2) is contained in an amount of 40% by mol or less relative to a total amount of the reducing agents.

4. A photothermographic material according to claim 2, wherein the reducing agent represented by general formula (R2) is contained in an amount of 40% by mol or less relative to a total amount of the reducing agents.

5. A photothermographic material according to claim 1, which further comprises a development promoter.

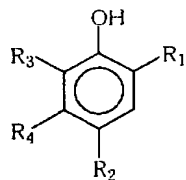
6. A photothermographic material according to claim 2, which further comprises a development promoter.

7. A photothermographic material according to claim 5, wherein the development promoter contains at least one selected from the group consisting of a compound represented by the following general formulae (A-1) and a compound represented by the following general formula (A-2):

General formula (A-1)



wherein Q_1 represents an aromatic group or a heterocyclic group which bonds to $-\text{NHNH}-Q_2$ via a carbon atom; Q_2 represents a carbamoyl group, an acyl group, an alkoxycarbonyl group, an aryloxycarbonyl group, a sulfonyl group or a sulfamoyl group,
General formula (A-2)



wherein R_1 represents an alkyl group, an acyl group, an acylamino group, a sulfonamide group, an alkoxycarbonyl group, or a carbamoyl group; R_2 represents a hydrogen atom, a halogen

atom, an alkyl group, an alkoxy group, an aryloxy group, an alkylthio group, an arylthio group, an acyloxy group, or a carbonic acid ester group; and R_3 and R_4 each represent a group which is substitutable at a benzene ring, or couple with each other to form a condensed ring.

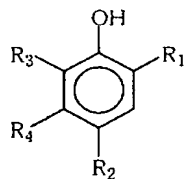
8. A photothermographic material according to claim 6, wherein the development promoter contains at least one selected from the group consisting of a compound represented by the following general formulae (A-1) and a compound represented by the following general formula (A-2):

General formula (A-1)



wherein Q_1 represents an aromatic group or a heterocyclic group which bonds to $-\text{NHNH}-Q_2$ via a carbon atom; Q_2 represents a carbamoyl group, an acyl group, an alkoxycarbonyl group, an aryloxy carbonyl group, a sulfonyl group or a sulfamoyl group,

General formula (A-2)



wherein R_1 represents an alkyl group, an acyl group, an acylamino group, a sulfonamide group, an alkoxycarbonyl group, or a carbamoyl group; R_2 represents a hydrogen atom, a halogen

atom, an alkyl group, an alkoxy group, an aryloxy group, an alkylthio group, an arylthio group, an acyloxy group, or a carbonic acid ester group; and R₃ and R₄ each represent a group which is substitutable at a benzene ring, or couple with each other to form a condensed ring.

9. A photothermographic material according to claim 1, which further comprises a hydrogen bond-forming compound.

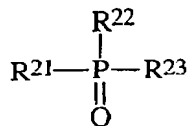
10. A photothermographic material according to claim 2, which further comprises a hydrogen bond-forming compound.

11. A photothermographic material according to claim 7, which further comprises a hydrogen bond-forming compound.

12. A photothermographic material according to claim 8, which further comprises a hydrogen bond-forming compound.

13. A photothermographic material according to claim 9, wherein the hydrogen bond-forming compound is a compound represented by the following general formula (D):

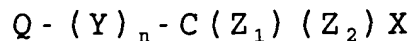
General formula (D)



wherein R^{21} to R^{23} each independently represent an alkyl group, an aryl group, an alkoxy group, an aryloxy group, an amino group or a heterocyclic group.

14. A photothermographic material according to claim 1, which comprises a compound represented by the following general formula (H);

General formula (H)



wherein Q represents an alkyl group, an aryl group or a heterocyclic group; Y represents a divalent linking group; Z_1 and Z_2 each represent a halogen atom; X represents a hydrogen atom or an electron withdrawing group; and n represents 0 or 1.

15. A photothermographic material according to claim 1, wherein a total amount of coated silver is 1.9 g/m^2 or less.

16. A photothermographic material according to claim 1, wherein thermal developing is completed within 16 seconds.